

IN THE CLAIMS:

Please amend claims 1-17 and add claims 18-20 as follows:

1. (Currently Amended) A ~~S~~sensor for measuring a ~~parameter~~~~gas concentration or ion concentration~~, comprising:

a ~~substrate of a first charge-carrier type~~;

a ~~drain of a second charge-carrier type fashioned~~ disposed on the substrate;

a ~~source of the second charge-carrier type fashioned~~ disposed on the substrate;

a channel region ~~of the substrate, which is arranged~~ disposed between the drain and the source;

a conductive guard ring ~~arranged~~ disposed outside the channel region;

a sensitive gate layer ~~with a whose potential that depends on the parameter~~~~an ambient gas concentration or ion concentration, there being~~;

an air gap disposed between the gate layer and the channel region; and

~~characterized in that an insulating layer disposed~~ between the guard ring and the channel region ~~there is fashioned an oxide layer on whose, the insulating layer having a surface on which there is~~ disposed ~~arranged~~ a ring structure having a surface conductivity different from a surface conductivity of a remaining portion ~~that of the rest of the surface of the insulating oxide layer~~.

2. (Currently Amended) The sensor of claim 1, further comprising ~~wherein~~ surface profiling ~~is provided, with~~ having at least one elevations and at least one depressions, and disposed between the guard ring and the channel region.

3. (Currently Amended) The sensor of claim 2, further comprising wherein the ring structure is applied by deposition on a surface between a second~~n~~ insulating thin layer disposed over~~n~~ the channel region ~~and the guard ring.~~

4. (Currently Amended) The sensor of claim 2, wherein the ring structure comprises is applied as an insulating material disposed on the insulating layer~~n~~ on one or a plurality of insulator layers, preferably thick oxide layers.

5. (Currently Amended) The sensor of claim 2, wherein the ring structure comprises a concentric structure~~is fashioned at least substantially concentrically between the channel region and the guard ring.~~

6. (Currently Amended) The sensor of claim 2, wherein the parameter comprises a gas concentration~~structure is made of aluminum or an aluminum-copper alloy.~~

7. (Currently Amended) The sensor of claim 2, wherein the parameter comprises an ion concentration~~gate layer comprises a gas-sensitive gate layer.~~

8. (Currently Amended) A sensor for measuring a gas concentration of an ambient parameter~~or ion concentration~~, comprising:

a substrate;

a channel region formed in the substrate;

a conductive guard ring arranged outside the channel region;

a sensitive gate layer whose potential depends on ~~an ambient gas~~ the concentration of the ambient parameter ~~ion concentration~~, an air gap disposed between the gate layer and the channel region;

an oxide layer disposed between the guard ring and the channel region, a surface of the oxide layer having a ring structure arranged thereon with a surface conductivity different from ~~the~~ the surface conductivity of ~~the~~ the remainder of the surface; and

a source and a drain forming a field-effect transistor, the transistor being spatially separated from the air gap between the gate layer and the channel region, the transistor having a gate that is connected by an electrode to the channel region.

9. (Currently Amended) The sensor of claim 28, wherein the ambient parameter comprises a gas ~~elevations simultaneously form the ring structure.~~

10. (Currently Amended) The sensor of claim 8, further comprising ~~wherein~~ surface profiling ~~is provided, with having at least one elevations and at least one depressions, and disposed~~ between the guard ring and the channel region.

11. (Currently Amended) The sensor of claim 8 ~~10~~, further comprising ~~wherein the ring structure is applied by deposition on a surface between an insulating thin layer disposed over on~~ the channel region ~~and the guard ring.~~

12. (Currently Amended) The sensor of claim 8 ~~10~~, wherein the ring structure ~~is applied as~~ comprises an insulating material disposed on the oxide ~~at least one insulator layer.~~

13. (Currently Amended) The sensor of claim ~~8~~10, wherein the ring structure comprises a is
~~at least substantially concentrically structure between the channel region and the guard ring.~~

14. (Currently Amended) The sensor of claim ~~8~~10, wherein the ambient parameter comprises
~~an ion concentration ring structure is made of aluminum.~~

15. (Currently Amended) ~~The sensor of claim 10, wherein the ring structure is made of an~~
~~aluminum-copper alloy~~ A sensor for measuring an ambient parameter, comprising:

a source;

a drain;

a channel region between the source and the drain;

a conductive guard ring outside the channel region;

a gate layer with a potential that depends on the ambient parameter;

an air gap between the gate layer and the channel region; and

an insulating layer between the guard ring and the channel region, the insulating layer
having a surface on which a ring structure is arranged having a surface conductivity different
from a surface conductivity of a remaining portion of the surface of the insulating layer.

16. (Currently Amended) ~~The sensor of claim 10, wherein the sensitive gate layer comprises~~
~~a gas-sensitive gate layer~~ The sensor of claim 15, further comprising at least one elevation and at
least one depression formed with respect to the insulating layer and between the guard ring and
the channel region.

17. (Currently Amended) ~~The sensor of claim 10, wherein the elevations simultaneously form the ring structure~~The sensor of claim 15, where the ambient parameter comprises a gas concentration.

18. (New) The sensor of claim 15, where the ambient parameter comprises an ion concentration.

19. (New) The sensor of claim 15, where the insulating layer comprises an oxide layer.

20. (New) The sensor of claim 15, further comprising an insulating thin layer over the channel region.